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Hendrik Klaas Louwsma

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EXAMINER

RAINEY, ROBERT R

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/535,369	Applicant(s) LOUWSMA ET AL.	
	Examiner ROBERT R. RAINEY	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 May 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 5.18.2009 have been fully considered.
2. The amendments to claims 24, 26, and 28 effectively overcome the 35 U.S.C. 112, first paragraph, written description rejections of the previous office action.
3. Applicant's arguments regarding the 35 U.S.C. 112, first paragraph, written description rejection of claim 23 are not persuasive. The text cited for support does not mention an increase/decrease of phase by 1 and Table 3 just shows different sequences for different pixels. If it was intended that Table 3 represent a shifting by one, note that the sequence for pixel 1 is not simply a shifted version of the other sequences. If, perhaps by affidavit and submission of documents used in preparation of the application along with citations and arguments from other portions of the specification as filed supporting an amendment of the specification, Table 3 could be corrected without triggering an issue of new matter, the amendments to claim 23 may find support. Note that examiner is not generally prone to equivocation but the lack of precision and an abundance of confusing language in the specification make it difficult to make a sure determination.
4. Applicant takes issue with a few points in examiner's response to applicant's arguments in the final office action dated 2/10/2009.

Applicant argues, page 8, that examiner's statement that applicant's arguments filed with the response to the non-final office action dated 5/1/2008 were not persuasive is inconsistent with the statement at the conclusion of the

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final office action that applicant's amendment necessitated the new ground(s) of rejection. This just seems to be a misapprehension of the arguments. In response to the non-final office action, applicant cancelled all existing claims and submitted entirely new claims. The particular limitations of the new claims were not identical to those of the original set of claims. While, the application of the art was substantially consistent with that in the non-final action, since the new claims were different from the original claims, the particular rejections of the final action were necessarily different. Applicant's arguments in response to the non-final action were not directed to the rejections of the claims presented in the non-final action as such; rather they were arguments that certain features of the new claims were not taught by the references cited in the rejections of the claims in the non-final action. Examiner did not agree with applicant's view of what the art did or did not teach.

Applicant restates the argument from the response to the non-final office action, paragraph at end of page 8 continuing onto page 9, that RGB level control is different from control of desired gray levels without flickering and clarifies that applicant did not seek to describe the invention as not being applicable to color displays. We are left then with a disagreement about what is taught by the references. To quote from examiner's response in the final office action: Applicant argues that the control provided by Ishii isn't the same as controlling gray level without flickering. First, flickering is not a term found in the claims. Second, Ishii directly states that it is known in the art that "Liquid crystal displays

have a number of well known characteristics which must be overcome by the associated controller. One characteristic is that if the various display pixels (picture elements) are excited so that adjacent picture elements are excited in the same phase, undesirable visual artifacts appear, degrading the quality of the resulting image. These artifacts include visual **flickering**, and a streaming motion. Frame Rate Control (FRC), **which involves introduction of a phase shift for excitation of adjacent pixels** in certain types of LCD controllers, is one technique for reducing certain of the aforementioned characteristics."

Comments

5. The limitation "wherein line time for data signal is split into a plurality of sub-line times for each consecutive time period", newly added to the independent claims, may be an attempt to shift prosecution to an embodiment of the invention represented at 6:12-17 in which "a phase in this example corresponds to a sub-line time". The fact that there is no action taken during the sub-line times means that this interpretation is not required. However, examiner notes that applicant has previously received an action on the application for an embodiment in which the "phase" corresponds to a frame time and any claims directed to a "phase" that corresponds to a sub-line time would therefore be subject to restriction. Similarly, now that applicant has cancelled all claims requiring an active matrix interpretation, no claim should be re-added that requires an active matrix interpretation. There would, of course, be no problem adding dependent claims to either

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the sub-line time or active matrix embodiments should a claim generic to the respective embodiment be found to be allowable.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. **Claims 23 and 29** rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As to **claim 23**, the specification as filed teaches increase/decrease of phase by 1 at certain times but does not mention this with respect to adjacent picture elements. While the specification as filed (at page 11:25-26 or [0048]) does teach that adjacent picture elements are addressed out of phase, it does not mention that this difference is 1. The text at 6:8-11 discusses phase shifting between different pixels but does not mention a difference of 1.

As to **claim 29**: there seems to be no support in the specification for changing the phase shifting “during selection of subsequent sequences of frame periods”.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 14-33 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to **claims 14-33**: Claim 14 and all of its dependents include the limitation “wherein phase of said sequence of consecutive time periods is shifted for different picture elements within the group”. Claim 33 has the same limitation except in reference to “consecutive **frame** periods”. It is unclear what is meant by this limitation. What is a phase of a sequence of consecutive time/frame periods? Reference to the specification where there seems to be an attempt to define the term provides only confusion (see 2:14-29): *“A phase in this patent application is understood to be the number of a sub-selection period in a sequence of time periods, when considering the total number of sequences, in this case the number of the position of the phase in a super-frame. In fact it specifies the (sub)-selection period at which a picture element or a group of picture elements is selected. Similar remarks apply to selecting a picture element or a group of picture elements during selection of a sub-selection time in subsequent*

sequences of selection times.” Among many issues: “phase” is defined circularly with reference to itself and the last sentence implies that the definition of “phase” is in some respect not-similar to the one provided when it is applied in subsequent sequences of selection times. Neither the quoted passage nor the ordinary meaning of the term in the claim language compels absolute clarity.

As to **claim 21**: First, there is insufficient antecedent basis for the limitation “sub-selection time-phase” in the claim. Second, what is a “sub-selection time-phase” or even just a “time-phase”? The term “sub-selection time-phase” shows up only in claim 10 as filed, thus there is no guidance as to what this might be. Third, what is meant by “selection of a sub-selection time”? Fourth, there is no initial sequence of selection times to provide antecedent basis for “subsequent sequences of selection times”. In each case the language does not compel absolute clarity.

As to **claims 22 and 33**, it is not clear whether “phase shifting” has “phase ... is shifted” as its antecedent or refers to something else.

As to **claim 23**: Claim 22 includes the limitation “wherein phase shifting is different for a sequence of consecutive time periods during a next selection time”. The antecedent basis for “phase shifting” seems to be “phase ... is shifted” in the phrase “wherein phase of said sequence of consecutive frame periods is shifted

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for adjacent picture elements within the group”. However, claim 23 goes on to fix the manner in which the phase is shifted. It is unclear how the phase shift can be both according to claim 23 and not according to claim 23, i.e. different.

As to **claim 28**: The phrase “wherein increases or decreases of number of selections within a sequence of selections for one time period only” does not make sense. Note, for purposes of examination examiner will assume that the meaning follows the specification (at page 2:31-32 or [0015]) which says that increases or decreases of the number of selections within a sequence of selections **are allotted to** one time period only.

As to **claim 29**: It is unclear what is meant by “selection of subsequent sequences of frame periods”. Even should there be a reasonable meaning, there was no prior selection of a sequence of frame periods to provide antecedent basis for a subsequent selection. Even if one assumes that the sequence referred to is the “sequence of consecutive frame periods”, this sequence was not “selected” nor does there seem to be basis for believing that there is more than one to select from.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. **Claims 14-20, 22, 23, and 29-33** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,362,834 to *Ishii* ("*Ishii*") in view of U.S. Patent No. 6,897,884 to *Tsuge et al.* ("*Tsuge*").

As to **claim 33**, *Ishii* discloses A display device comprising: an array of picture elements defined at areas of crossings of selection electrodes and data electrodes (the construction of passive matrix displays, mentioned at for example column 1 lines 25-28, as claimed was well known to those skilled in the art at the time of the invention and the existence of selection and data electrodes, selection and data electrodes are further implied at column 7 lines 1-4 especially "column and row counters" since column and row define a crossing matrix and were known in the art to carry data and selection signals respectively, in the most common convention, and the alternative mapping was also known); a data driver driving the data electrodes in accordance with an image to be displayed at the picture elements (see for example column 1 lines 27-32, *Ishii* does not explicitly mention separate data drivers but this would have been fairly suggested to one of ordinary skill in the art at the time of the invention); a selection driver providing selection signals to selection electrodes to drive the associated picture elements (see for example column 1 lines 27-32, *Ishii* does not explicitly mention separate

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selection drivers but this would have been fairly suggested to one of ordinary skill in the art at the time of the invention), wherein the selection driver drives a group of adjacent picture elements to display a same gray level during a selection time (while Ishii does not limit its teachings to displaying the same gray level in adjacent picture elements it would have been obvious to one skilled in the art that this could be done and often was as evidenced by the "blue screen of death" displayed when a system running a Microsoft operating system experienced an unrecoverable error), wherein the selection driver drives each picture element within the group by switching on/off state of each picture element within a sequence of consecutive frame periods during the selection time (see for example column 1 line 39, which describes the use of "Frame Rate Control", which is well known in the art, as evidenced by the instant application publication [0004] - [0006], to include consecutive frame periods in a super-frame, which corresponds to a "selection time" in the instant application), wherein phase of said sequence of consecutive frame periods is shifted for adjacent picture elements within the group (see for example column 1 lines 39-42, "Frame Rate Control (FRC), which involves introduction of a phase shift for excitation of adjacent pixels ..."), wherein phase shifting is different for a sequence of consecutive time periods during a next selection time (see for example 6:9-30; note that a dither cycle two FRC cycles, i.e. frame rate control cycle or super-frame or sequence of consecutive time periods, long, which teaches or reasonably suggests that the dithering is different during the second FRC cycle

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than it is during the first, is included in the table as one possibility), and wherein line time for data signal is split into a plurality of sub-line times for each consecutive time period (Since no action is required during a sub-line time and any line time comprises an arbitrary number of sub-line times, the limitation is taught. But note also that *Tsuge*, which is combined below, also teaches PWM/PAM within one or more frames of an FRC cycle.).

Tsuge discloses a matrix display and its drive method and in particular a teaching that phase shifting is different for a sequence of consecutive time periods during a next selection time (see for example 1:48-60 especially. "...different ON/OFF patterns are used ... every frame ..." and Fig. 3 in which a Frame Shift is shown comparing (a) and (d); in this case the selection time, or that period over which a gray scale is generated, is a frame and there are seven consecutive time periods with one on-period and six off-periods shown; while the phase remains shifted for each element compared to adjacent picture elements in the second frame it is different than in the first frame).

Ishii and *Tsuge* are analogous art because they are from the same field of endeavor, which is matrix displays.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to improve the phase shifting for adjacent pixels as taught by *Ishii* by including the teaching of *Tsuge* to make the phase shifting different during a next selection time. The suggestion/motivation would have been to

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provide advantages such as to provide for driving at a low frame frequency (see for example Tsuge 1:48-52).

Claim 14 claims a subset of the limitations of claim 33 and is rejected on the same grounds and arguments.

As to **claim 15**, in addition to the rejection of claim 14 over *Ishii* and *Tsuge*, *Ishii* further discloses a passive matrix type display and it was known in the art that a type of passive matrix display is one in which the selection electrodes and data electrodes are respectively supported on opposing substrates and it would have been obvious to use such a known type of display.

As to **claim 16**, the rejection of claim 14 already covered the limitation that the sequence of consecutive time periods is a sequence of consecutive frame periods.

As to **claim 17**, in addition to the rejection of claim 14 over *Ishii* and *Tsuge*, *Ishii* and *Tsuge* may not explicitly disclose that the selection driver, during each time period, sequentially drives the picture elements within the group during the selection time.

Examiner takes official notice that sequential driving of picture elements during a frame, i.e. time period, was well known to those skilled in the art at the

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time of the invention. In fact sequential scanning of the rows, i.e. as driven by the selection driver, was and is so common that it is most often noted only when not employed.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use an art recognized scanning scheme.

As to **claim 18**, the limitation that the selection driver sequentially provides the selection electrodes of the group of picture elements during the selection time with selection signals to sequentially drive the picture elements was already implicit in the rejection of claim 17 since supplying selection signals is what a selection driver inherently does.

As to **claim 19**, in addition to the rejection of claim 18 over *Ishii* and *Tsuge*, *Ishii* and *Tsuge* further discloses selection drivers that provide mutually orthogonal selection signals to the selection electrodes for the group of picture elements to drive the picture elements (Broadly interpreted, signals are “mutually orthogonal” if they don’t interfere with each other. All selection signals have this feature, since they wouldn’t work if one selection signal selected elements intended to be selected by a different signal.).

As to **claim 20**, in addition to the rejection of claim 17 over *Ishii* and *Tsuge*, *Ishii* further discloses that different voltages are applied to the data

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electrodes during sub-selection times of the selection time (As covered in the citations for the parent claims, Ishii teaches using multiple frames within a super-frame or in the language of the claim multiple sub-selection times within a selection time in order to generate a particular gray scale. Since during some of the frames a pixel is off and during some it is on the voltages applied to the data electrodes must have been different in the different frames.).

As to **claim 22**, in addition to the rejection of claim 14 over *Ishii* and *Tsuge*: *Ishii* further discloses that the phase of the sequence of consecutive time periods is altered after each sequence of consecutive time periods (see for example 6:9-30; note that a change after each FRC cycle, i.e. frame rate control cycle or super-frame or sequence of consecutive time periods, is included in the table as one possibility, as is a dither cycle which is two FRC cycles long.). And *Tsuge* further discloses that the phase of the sequence of consecutive time periods is altered after each sequence of consecutive time periods (see for example 1:48-60 especially. "...different ON/OFF patterns are used ... every frame ..." and Fig. 3 in which a Frame Shift is shown comparing (a) and (d) that shows that the phase is altered after each sequence of consecutive time periods). The limitation that phase shifting is different for a sequence of consecutive time periods during a next selection time was covered in the rejection of claim 33, which was used to reject claim 14.

As to **claim 23**, in addition to the rejection of claim 22 over *Ishii* and *Tsuge*, *Ishii* further discloses that the phase of the sequence of consecutive time periods is increased or decreased by one time period between adjacent picture elements (see for example Figure 3(a) in which the phase of adjacent picture elements differs by 1).

As to **claim 24**, the limitation that the group of picture elements are driven to display a substantially same gray level was covered in the rejection of claim 33, which was cited as the rejection for claim 14 from which claim 24 depends.

As to **claim 29**, the limitations that the sequence of consecutive time periods is a sequence of consecutive frame periods, and wherein phase shifting is changed during selection of subsequent sequences of frame periods during a next selection time were covered in the rejection of claim 33, which was cited as the rejection for claim 14 from which claim 29 depends.

As to **claim 30**, in addition to the rejection of claim 14 over *Ishii*, *Ishii* further discloses that the number of selection electrodes is p ($p \geq 1$) (see citations for claim 14 note that in order to function the display must have at least one selection electrode).

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As to **claim 31**, in addition to the rejection of claim 30 over Ishii, Ishii does not explicitly disclose that $p = 1$, but such an implementation would have been fairly suggested to one of ordinary skill in the art at the time of the invention (while Ishii does not limit its invention to a single selection electrode, one of ordinary skill at the time of the invention would have recognized that a display could be made with any number of rows from 1 to as high a number as desired; therefore a display with only one row would have been obvious), and wherein different voltages are provided to the data electrodes at sub-selection times of the selection time (As covered in the citations for the parent claims, Ishii teaches using multiple frames within a super-frame or in the language of the claim multiple sub-selection times within a selection time in order to generate a particular gray scale. Since during some of the frames a pixel is off and during some it is on the voltages applied to the data electrodes must have been different in the different frames.).

As to **claim 32**, in addition to the rejection of claim 30 over Ishii, Ishii does not explicitly disclose that $p = 4$, but such an implementation would have been fairly suggested to one of ordinary skill in the art at the time of the invention (while Ishii does not limit its invention to four selection electrodes, one of ordinary skill at the time of the invention would have recognized that a display could be made with any number of rows from 1 to as high a number as desired; therefore a display with four rows would have been obvious).

12. **Claims 21 and 25-28** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,362,834 to *Ishii* ("*Ishii*") in view of U.S. Patent No. 6,897,884 to *Tsuge et al.* ("*Tsuge*") and further in view of U.S. Patent No. 6,198,469 to *Tjandrasuwita* ("*Tjandrasuwita*").

As to **claim 21**, in addition to the rejection of claim 17 over *Ishii* and *Tsuge*:

Ishii and *Tsuge* may not expressly disclose that sub-selection time-phase is changed during selection of a sub-selection time in subsequent sequences of selection times.

Tjandrasuwita discloses a frame-rate modulation method and in particular that sub-selection time-phase is changed during selection of a sub-selection time in subsequent sequences of selection times (see for example Fig. 6, 9 and column 13 line 64 to column 14 line 20 and column 14 line 37 to column 17 line 7; note especially column 14 lines 60-67 "...the frame offset value, the horizontal pixel offset value, the vertical line offset value, and the color offset values are used as variables in determining the waveform accessing index..." which is the WAVEFORM INDEXs of Fig. 6, which indexes determine the phasing of the waveforms. Since the frame offset, i.e. sub-selection time offset, is used as an input the phase is changed during selection of a sub-selection, i.e. frame.).

Ishii and *Tjandrasuwita* are analogous art because they are from the same field of endeavor, which is liquid crystal displays.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to include a change of time-phase during selection of a sub-selection time in subsequent sequences of selection times as taught by *Tjandrasuwita* in the device after *Ishii* and *Tsuge*. The suggestion/motivation would have been to provide advantages such as to prevent screen flickering (see for example *Tjandrasuwita* column 15 lines 1-7).

As to **claim 25**, in addition to the rejection of claim 14 over *Ishii* and *Tsuge*:

Ishii may not expressly disclose a grayscale table for generating gray level data, wherein sequences of sequential gray levels are defined by grouping plurality of sequential gray levels.

Tjandrasuwita discloses a frame-rate modulation method and in particular: a grayscale table for generating gray level data (see for example TABLE 2 and column 11 line 52 to column 12 line 11, in which "brightness-level waveforms" corresponds sequences) wherein sequences of sequential gray levels are defined by grouping plurality of sequential gray levels (see for example Table 2 noting that each weight shows groupings of a plurality of sequential gray levels),

Ishii and *Tsuge* and *Tjandrasuwita* are analogous art because they are from the same field of endeavor, which is liquid crystal displays.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to use a grayscale table as taught by *Tjandrasuwita* in the device after *Ishii* and *Tsuge*. The suggestion/motivation would have been to provide advantages such as a cost effective modulation apparatus (see for example column 2 lines 26-28) or the ability to program gray level data sequences according to the requirements of the panel (see for example column 12 lines 1-11).

As to **claim 26**, in addition to the rejection of claim 25 over *Ishii* and *Tsuge* and *Tjandrasuwita*, *Tjandrasuwita* further discloses that sequences of sequential gray levels are applied to non-sequential selections of time periods within the sequence of consecutive time periods (see for example Table 2 noting that groupings of "1"s are separated by groupings of "0"s and vice versa).

As to **claim 27**, in addition to the rejection of claim 26 over *Ishii* and *Tsuge* and *Tjandrasuwita*, *Tjandrasuwita* further discloses that displayed gray levels are increased or decreased by selections from the grayscale table corresponding to a sequence of gray levels (see for example Table 2 in which the sequence of gray levels comprises 17 items from 0/16 to 16/16 the particular sequence desired is selected from this sequence of gray levels, see for example 12:43-50 and Fig. 6; increased or decreased displayed gray levels are achieved by

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selecting increased or decreased gray level generating sequences from among the 17 sequences).

As to **claim 28**, in addition to the rejection of claim 27 over *Ishii* and *Tsuge* and *Tjandrasuwita*, *Tjandrasuwita* further discloses that increases or decreases of number of selections within a sequence of selections for (examiner reads "are allotted to" in place of "for") one time period only (see for example Table 2 and 12:43-50 and Fig. 6, note that decisions to increase or decrease the display gray level occur during a single time period, that being either during the first or last time period, i.e. frame, of an FRC cycle).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT R. RAINEY whose telephone number is (571)270-3313. The examiner can normally be reached on Monday through Friday 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on (571) 272-7674. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/RR/

/Amare Mengistu/
Supervisory Patent Examiner, Art Unit 2629